

Urban Transport in France: moving to a more sustainable policy

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Abstract

The organisation of urban public transport in France has some specificity in comparison to other European countries, even if problems are similar and the creation of the European Union leads progressively to an harmonisation. To understand these differences, it is first necessary to focus on historical and institutional aspects, including the 1982 Transport Law. This paper describes the evolution of the urban transport policy, giving illustration through the case of Lyon's conurbation; it highlights the reasons for an unsuccessful attempt to reduce car use for urban trips, and discusses the main stakes for implementing new sustainable transport policies in French cities.

1. Introduction

Since the sixties, the development of car industry in France led to a high level of households' motorization. The consequence is to increase car use in the cities and to favour peripheral urbanisation which induces more traffic jams, especially in the city centre where the street network cannot absorb car flows. For several years, French cities tried to contain congestion by developing public transport (PT) supply. But the PT market share remains low and tends to decrease over years. As air pollution, noise and congestion are still growing, the 1982 Transport Law asserts the need to give priority to PT reinforcement to cope with the objectives of a sustainable development. As larger cities can get financial resources from a dedicated Transport Tax, created in the middle of 70's, many projects of right-of-way transport system are now implemented in order to create a more attractive alternative to car use. The choice is made to favour on-street systems, such as tramway lines, which have a capacity more adapted to the patronage flows, and offer an opportunity to reduce road capacity and to re-design urban public spaces for pedestrian and cycles. Despite these heavy investments, the reduction of car use is not achieved. Moreover, the low level of patronage limits the fare revenue and can lead to a hard financial crisis for PT networks. Nowadays, city councillors are convinced the urban transport policy cannot be limited to PT supply increase and have to penalise car use by different ways.

To illustrate this new orientation, a brief description of the evolution of urban transport policies in France is necessary (part 2), then a presentation of the institutional organisation is made to understand the difficulty to implement coherent transport policies in urban areas (part 3). Finally the main characteristics of daily mobility are presented through the example of the Lyon agglomeration and its transport policy is detailed (part 4). The conclusion discusses some ways to go further in the control of car use in French cities.

2. A recent history of urban transport in France

Some years after the reconstruction following the second World War, the French government decided to build a strong automobile industry, which can favour a quick economic development. The national Planning Agency² promoted in the 3rd and 4th five-year plans the progressive adaptation of the old Latin-typed cities to the automobile through a massive program of urban renewal and road construction. As the exodus from rural areas to cities was very strong, a hard housing crisis obliged the government to create new suburban residential zones, which cheap industrialized buildings. City planners were influenced by the American way of life and the belief in automobile as a symbol of social progress led to a zoned planning, sharing employment location and residential areas. Such a spatial segregation of activities can be done if most of the households can have a car. At the end of the 50's, most of the main cities decided to close their streetcar networks, which were perceived as old technologies and signs of the past.

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The inability to finance urban road networks leads to develop Public Transport

At the end of the 60's, the quick increase of population and the higher level of car ownership lead to a heavy traffic congestion in the small roads of the historical city centres. Even if huge programs of modernisation of road networks are planned, most of the cities are unable to finance these projects (Dupuy, 1991). In a so centralised country, the State only can manage the realisation of new infrastructures. In this 'era of concrete', the cities are then obliged to reduce pavements to increase the capacity of existing streets.

In such a context, the public transport (PT) is considered as a 'social service', i.e. a means of transport for poor people who cannot buy a car. The reorganisation of PT networks is done to reduce the level of service, as private companies cannot get benefits. Bus lines are limited to radial routes, to let people travel from their peripheral flat to their work in the city centre. Tariff are drastically lowed to cope with the limited revenue of their customers. In order to save money, private companies reduce the number of on board employees from 2 to 1 in the buses. Indeed the quality of service is very low, and the rolling stock cannot be renewed. This 'vicious circle' leads to a higher use of private cars and an increase of traffic congestion (Lefebvre, Offner, 1990).

To cope with these traffic trouble in the centre of the main French cities, the Ministry of Transport proposes in 1971 to implement new Traffic Management Schemes (TMS). Their goal is to reduce congestion through two main actions: i) increasing the number of traffic lights at the main crosses, ii) generalising one way streets. If these measures let to increase the average speed for cars, they are quickly insufficient to improve traffic, and the cities decide to complementary measures, such as pedestrian areas for too narrow street, and bus lanes on radial routes, to favour modal split.

But the most important decision taken by the Ministry of Transport is to create the '*Versement Transport (VT)*': this transport dedicated tax is based on the total wages paid by the firms of more than 9 employees, and located within the Urban Transport Area. The idea is that firms indirectly benefit from the existence of a PT network (home-to-work trips, traffic congestion reduction, improved accessibility). The VT lets the cities get a large amount of money to increase and improve the transport supply. Another important impact is to incite the communes to create a union to manage the together the PT network, as this tax is allowed only for conurbation of more than 100 000 inhabitants (see below for institutional aspects).

Then the 70's are a period of a fast and strong development of public transport in French cities. The 1973 oil crisis incites to implement energy saving policies, and the population begins to be sensitive to environment (air pollution, noise,...). The Ministry of Transport helps cities with PT Development Grants to buy modern buses, and supports the decision of the three main French conurbations (Lille, Lyon, Marseille : more than 1 million inhabitants) to build their first subway lines. In the same time, the road policy changes: the creation of radial roads to enter the city is banned to favour PT use, and the funds are given for building by-passes of inter-city highways. In the cities, the TMS are designed to penalise through-traffic, but an effort is still made to increase the number of parking lots for cars, often very close to the city centre.

The 1982 Transport Law and the Urban Trips Plans

The beginning of the 80's is characterised by a large movement of decentralisation in the country: the government decides to transfer a lot of responsibilities from the State level to the regional and local levels. Then the cities get financial means from the State, calculated in relation to their population and richness, and can decide locally which their priorities are. Even if urban transport is already a question managed by cities, the 1982 Transport Law³ re-designs the share of responsibilities. As public transport is recognised as a main public service, which can be accessible to everyone, the law creates new Transit Authorities ('*Autorités organisatrices*' –AO) in charge, not only of the PT organisation, but of the whole local transport policy, including car traffic, parking, and 'soft modes' (cycling and walking); Such a multi-modal orientation means a fundamental change for local policies, as the competition between private car and PT is replaced by a search for complementarity between transport modes (Lefebvre, Offner, 1990).

As PT appears to be the more efficient transport mode in dense areas, a lot of French Transit Authorities decided to create surface light rail lines, such as tramways, in medium sized cities: Nantes (1985) and Grenoble (1987) are the first cities to do so. Three reasons can explain the choice of the tramway: i) the investment cost is 5 times cheaper than a subway line, as it is built on surface; ii) the rail track needs to be out of traffic jams and let have an attractive commercial speed for customers; iii) implementing the line on existing streets is a way to reduce road capacity and penalise car use.

The 1996 Air Quality and Energy Rational Use Law lets now the Urban Trips Plans be an obligation for cities of more than 100 000 inhabitants and decides then the reduction of car traffic is one of the main objectives of such plans. The 2000 Urban Solidarity and Renewal Law is a latest step to a more sustainable policy, as it imposes the local Land Use Plans to be compatible with the urban Trips Plans. It also give the possibility to Transit

³ *Loi d'Orientation sur les Transports Intérieurs (LOTI)*

Authorities to be responsible for parking policy (including tariff) and to extend the Urban Transport Area in order to take into account peripheral urbanisation. It also decides to transfer the regional railways management to the Regional Councils, to incite for a better co-operation between regional and local networks.

Nowadays most of middle sized cities have implemented (or will implement) surface right-of-way transport lines, such as tramways or guided buses. But the main goal of reducing car traffic is not yet achieved. Several reasons can explain it: i) the institutional organisation in France is very complex and not really adapted to the management of transport; ii) the urban sprawl to peripheral areas, where households can buy a small house with a garden, is not in favour of PT use, as distances are longer, and low density zones cannot favour a high quality transport supply.

3. Institutional aspects of local transport in France

The French administrative system comes from the 1789 revolution, and since that time, it has only slightly changed. Its main characteristic is to share competencies between a large number of local actors who are responsible on various territories. The 1982 Decentralisation Law tries to reorganise the share of responsibilities in a more clear system, but such an evolution will need time, after so many years of central administration dependency.

The three main levels of territorial administration

The basic level is the '*commune*' (a village or a city), which was pertinent two centuries ago, as it corresponded to the catholic parish-based organisation. There still are more than 36 000 communes, some of them can be very big (like the city of Marseilles – more than 1 million inhabitants), some others having only 200 inhabitants or less⁴. Each commune has its own mayor and city council, and is responsible for all aspects of the administration duty and the management of public services. In the field of transport, the mayor is in charge of roads works and traffic management and can operate its own public transport system.

In order to adapt the administrative organisation to functional territories, several laws were voted to create unions of communes. The 1999 National Territorial Administration Law creates three types of unions:

- the Urban Community for the major agglomerations (more than 500 000 inhabitants) can benefit of an obligatory quasi full transfer of competencies from the communes which decide to be member;
- the Agglomeration Community is a union for middle-sized cities (more than 50 000 inhabitants, with one commune of more than 15 000 inhabitants): the main competencies (economic development, land use planning – including PT, housing policy) have to be transferred, but some others can be transferred or stay under the responsibility of each commune, such as street and parking, public utilities, water supply, environment, sports and cultural equipment,...
- the Commune Community is for smaller cities, and only land use planning and economic development are responsibilities which have to be transferred; in this case the organisation of public transport is a facultative competency to be transferred.

One of the main differences between these three types of unions concerns the creation of a unique local tax for firms for the two first cases, i.e. this tax revenue is then managed by the community. This is a way to reduce inequities between poor and rich communes. In the case of Commune Community, each commune keeps its tax revenue and just give a grant to the community.

It has to be noted that the adhesion to a community is volunteer, but financial incentives from the State will help to develop that kind of unions of communes. If the responsibility of public transport is transferred the community becomes the Transit Authority, but the urban Transport Area can be smaller than the territory of the community. Nowadays, more than 200 Transit Authorities are born by the way of these communities.

The second official level of territorial administration is the '*Département*' (99 in France), which is now in charge of education (2° degree – '*collèges*'), social assistance (low income households, aged people), local inter-city roads and non urban road public transport (and especially scholar bus lines).

The third level is the Region (21) which is in charge of education (professional training and 1° degree – '*Lycées*'), economic development and land use, and since 2001, regional railways lines.

In this organisation, the State has no more responsibility for local transport, but it keeps a wide influence through the organisation of highways and national roads networks, national railways lines (including High Speed Trains), and it can still act on local policies by the way of investment grants.

⁴ The Paris region has a specific organisation, due to its status of capital of the country

The main difficulty induced by the administrative organisation is to generate a gap between political and functional territories, as the borders of each commune has nothing to do with the geography of inhabitants' daily trips. Figure 1 shows the case of Lyon's conurbation case, where the Urban Transport Area (55 + 6 communes) is nearly the same as the Urban Community, but the pertinent area to manage daily mobility should be the Urban Area (239 communes) which defined taking into account the home-to-work trips distribution. This means the organisation of public transport has to be co-ordinated between the Urban Community (urban transport), three 'Départements' (non urban bus networks, scholar buses) and the Region (suburban regional trains). It is a source of difficulties, as the co-ordination in terms of level of service (frequency, interchanges) is not well assumed and tariff systems are rarely integrated: everything works separately.

The role of private transport companies in urban public transport

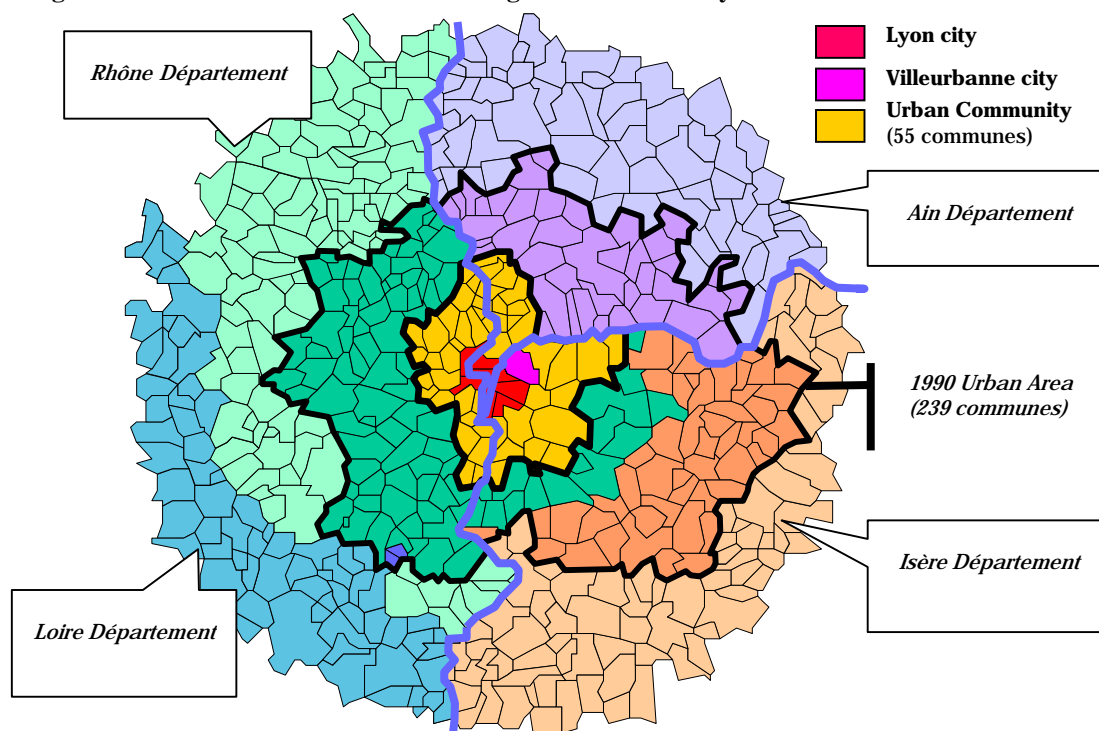
In France, the Transit Authority can decide to operate the public transport by itself ('*Régie*' type) or to transfer this duty to a private company. In this case two main types of contracts exists (CERTU, 2000):

- a public/private company is created, in which more than 50% belongs to the public institution : it is called '*Société d'Economie Mixte*' - *SEM*. The rolling stock and the buildings belong to this company.
- A contract is signed with a private company. Depending on the type of contract, rolling stock and buildings can belong to the Transit Authority or the private company.

In general the contract is signed for a 5-6 years period. In every case, the operating company has a monopoly on all the concerned transport area. For example, non urban bus companies cannot have bus stops within the urban transport area, except if the urban Transit Authority agreed to allow a limited number of stops.

Since several years a concentration of transport companies happened since the reinforcement of competition due to the 1982 Transport Law. Moreover, the European Union's directives incite now to a wider competition, opening national markets to foreign companies. There are now three main groups in France, which are:

Figure 1 : the territorial administrative organisation in the Lyon's conurbation



- CONNEX, which is the world-wide leader in passenger transport, even if it is only the number 2 in France (in terms of the number of operated urban networks). This company is a subsidiary of the *Vivendi Environnement* Group (VEOLIS).

- KEOLIS is the number one in France. It is now a subsidiary of the French National Railway company (SNCF). The Lyon's network (which is the main network in France, the Paris Region excluded) is operated by a subsidiary of KEOLIS.
- TRANSDEV is the third group. Its specificity is to propose SEM type contract, as it is a semi-public company.
- Some public transport networks are still operated by smaller private companies, mainly in smaller cities, but they are now frequently contested at each new appel d'offre. Some of them created an association, named AGIR, to be stronger in the competition with the three main groups.

In the contracts, different types of remuneration are possible, depending the way the risks on the commercial revenue are shared: in most of the case the fare revenue is given to the Transit Authority, which pays to the operator the difference between total operation cost and fare revenue. It is the responsibility of the Transit Authority to design all the characteristics of the transport service, such as frequency, bus stop location, and so on, as urban transport remains a public service, even if it is operated by a private company. The 6 year bidding system is supposed to favour a reduction of the operation costs. This seems to work for smaller cities, but in the main ones, changing the operator is rare, except in case of a specific conflict with the Transit Authority.

The responsibilities of the Transit Authority

In accordance with the 1982 Transport Law, the Transit Authority assumes the following missions:

- It defines all the characteristics of the transport supply, i.e. routes, location of bus stops, frequency, timetable; it can also determine the level of service quality the private operator has to reach, such as punctuality, cleanliness, users' information, through a system of financial penalties in the contract.
- It defines the fare systems, including social fare reduction (scholars, aged or unemployed people), but it has to cover the deficit due to this social fares. If the private operator wants to offer other commercial reduction it is under its own responsibility. As a consequence, the Transit Authority will pay for the deficit due to the difference between operation costs and fare revenue.

Table 1: main characteristics of the Lyon's transport network in 2001

Transport systems	Number of lines	Length (km)	Rolling stock	Vehicle.km	Number of trips
Subway	4	30	184	28 %	52 %
Tramway	2	19	39	3 %	6 %
Bus routes	100		945 buses 87 trolley buses 31 mini buses	62 % 5 % 2 %	42 %
Bus lanes		62			
Park-and-ride	9	3,600 cars			
Total (per year)				50.4 millions	1.2 millions
Total per year and per inhabitant				45 km	140 trips

Source : SYTRAL, 2002

Table 2: the Lyon's Transit Authority budget in 2001

Resources			Expenses		
Fare revenue	53 M€	9.5 %	Operating contribution	154 M€	27.5 %
Transport Tax	168 M€	30.0 %	Current expenses	37 M€	6.6 %
Community funds	121 M€	21.7%	Financial charges	59 M€	10.5 %
Other receipts	53 M€	9.5%	Sinking funds	76 M€	13.6 %
Loans	106 M€	18.9 %	Investments	116 M€	20.7 %
Other Investment receipts	59 M€	10.5	Savings	118 M€	21.1 %
Total	560 M€	100 %	Total	560 M€	100 %

Source : SYTRAL, 2002

- It defines and finances the investment plans for the development or the improvement of the transport network: building a new tramway line, renewing bus fleet or fare collection system, building park-and-ride lots or interchange stations, and so on.

- It has to define the multi-modal transport policy on all the Urban Transport Area. Such an Urban Trips Plan (UTP) is designed for 10 years and revised after 5 years; it covers all aspects of transport conditions, such as the public transport supply development, the traffic and parking conditions, pedestrian and cycling routes, and since a couple of years, the urban goods logistic scheme and the companies' employees home-to-work trip organisation.

In the case of Lyon, the Transit Authority is an institution regrouping the Urban Community and the *Département du Rhône*. This kind of mixed union is not frequent and is due to the fact that the Lyon Agglomeration is the second one in France and plays an important role in the *Département*. This is a way to favour a better co-operation between urban and non urban transport, even if the urban transport areas is limited to the Urban Community's one.

Before presenting the main orientation of the present Lyon Agglomeration UTP, let describe some characteristics of the evolution of daily mobility in this area.

4. The urban transport demand and the new policies in the Lyon Agglomeration

Evolution of daily mobility in the Lyon Agglomeration

Transport demand depends on many parameters, among which home and activities location. As in many French cities, one can observe an important trend of peripheral location, which has two consequences: i) the density of the central area is lower; ii) the distance for travelling are increasing. The evolution of job location in the Lyon urban area is given in table 3.

Table 3: Evolution of job location in the Lyon urban area

	1990/1982	1999/1990	1999 Distribution	1999 Population
Central area (communes of Lyon and Villeurbanne)	-0.5 %	- 4.4 %	42 %	35 %
Urban Community (53 communes)	+ 14.5 %	+ 5.9 %	36 %	36 %
1999 Urban Area (241 communes)	+ 23.6 %	+ 26.7 %	22 %	29%
Total	+8.4 %	+4.9 %	100 %	100 %

Source : SYTRAL, 2003

Data on daily mobility is only available on the Urban Community area, as it corresponds to the urban transport area; Several surveys were conducted in 1976, 1986 and 1995, which give a good image of the main changes in transport demand. The main features are :

- A continuous increase of car ownership, especially in peripheral areas, where there are now about 800 cars for 1,000 inhabitants of more than 18 years old. This fact is important as the more people have cars, the more they use it.
- The daily mobility is more slowly increasing reaching 4.0 trips per day and per inhabitant. But the modal split is still evolving in favour of car use, as it can be seen in table 4. Between 1986 and 1995, the number of trips made by car increased by 38 %, as the number of trips by PT increased only by 17 %.
- The geography of trips is changing and reinforce the use of car. In the city centre, where PT supply is the more dense, the number of trips by PT increased by 20%, as the number of trips by car increased by 28 %. On the radial routes between city centre and peripheral areas, results are respectively +8 % and + 25 %, and on peripheral trips, + 9% and + 47 %
- The activity pattern is also changing, as the duration of work is reduced and leisure activity are growing. Observing the purpose of trips shows home-to-work trips represent only ¼ total trips, as leisure and shopping trips are growing to 48%. Another characteristic is the progression of accompaniment trips, i.e. trips done to accompany children to school or to non scholar activities. This is due to the growing number of households living in low density peripheral areas, where distances are seen too long for children.

Table 4: Evolution of modal split in Lyon urban community

	1976	1986	1995
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Walking	45.8 %	37.1 %	31.4 %
Private car	38.1 %	46.1 %	53.0 %
Public transport	11.0 %	15.1 %	14.3 %
Cycling	5.1 %	1.7 %	1.2 %

Data : Lyon Household Travel Survey – 1976, 1986, 1995 – Source : Masson et al., 1997

Table 4: Evolution of modal split in Lyon urban community

Trip purpose	1976	1986	1995
Home-to-work	29.6 %	27.8 %	25.2 %
Home-to-school	16.1 %	14.6 %	13.6 %
Accompaniments	11.6 %	11.4 %	13.2 %
Leisure / shopping	42.7 %	46.1 %	48.0 %

Data : Lyon Household Travel Survey – 1976, 1986, 1995 – Source : Masson et al., 1997

This evolution of mobility has several consequences on the public transport network. First new lines have to be created to keep close to home location, but the low density makes such lines very costly, and the level of service is too weak to make PT attractive, in comparison with the availability and the speed of private cars. Second, the changes in the origin-destination matrix show the development of peripheral trips, as traditionally the PT network is designed for radial routes to the city centre. All these elements can explain the loss in market share for public transport, and the continuous increase of the deficit the Transit Authority has to cover.

Even if the Lyon Urban Community got benefit from the building of the subway network in the middle of the 70's, avoiding traffic congestion and increasing patronage, it seems the global transport system improvement and the lack of control on land use in peripheral areas induced a wider urban sprawl, which is now a problem for the efficiency of the PT network. As in many French cities, the balance sheet of a supply oriented policy appears to be inefficient, and new strategies have to be defined to fight the present trend.

The 1997 Lyon Agglomeration Urban Trips Plan

To face these problems, the Transit Authority decides in 1997 to design a new Urban Trips Plan, following the recommendations of the 1976 Air Quality Law. One of the goals is to make people understand the necessity to change some important features of the transport policy. The main one is to stop building new subway lines, due to the bad financial situation of the Transit Authority (the total debt reaches 1.2 M€ in 2001). Another reason is underground subway lines have no impact on car traffic limitation, as they reduce traffic congestion and favour induced traffic. In order to cope with sustainable development objectives, the transport policy must try to stop the increasing use of car, mainly in the more dense areas of the agglomeration. Consequently, the main goals of the 1997 UTP are (SYTRAL, 1997):

1. Reducing negative external effects:
 - Decreasing the number of accidents by 40% in 10 years
 - Stabilising the level of noise in the city
 - Limiting local air pollution (NO₂, particles)
 - Improving the quality of urban public spaces (decreasing on street parking)
2. Improving accessibility and equity
 - Inciting households to stay in the dense area
 - Developing a credible alternative to car use with a high quality PT network
 - Reducing the differences in PT service quality among districts
3. Increasing the PT market share for mechanised trips
 - The 2005 trend is 19.0 % (1995 = 20.6%)
 - The 2005 objective is 22.5 %
4. Keeping walking practise at a good level
 - City centre trips
 - Inner districts trips

To reach these objectives, several measures are decided :

1. Creating 12 'high quality' new PT lines (figure 2)
 - completing the structure of the PT network and creating a direct link between the main peripheral poles and the city centre.
 - Implementing right-of-way systems, such as tramway or guided trolley buses, with a high level of service (frequency, punctuality)
 - Restructuring the bus network to provide links between peripheral areas and city centre with not more than one transfer
2. Developing regional railway lines in co-operation with the Regional Council for longer trips
3. Creating a Cycle Route network in the city (up to 200 km in 10 years)
4. Developing urban public spaces for pedestrian and residents
5. Restructuring parking supply (fares, residents' parking, goods delivery)
6. Reorganising car traffic conditions (road capacity reduction on radial roads, speed limited area in residential areas)
7. Defining a more coherent land use policy
 - Limiting urban sprawl
 - Giving priority for urbanisation to areas with a good PT supply (housing and economic activities)
 - Defining a hierarchical structure for the urban road network
8. Rejecting inter-city traffic on peripheral by-pass highways (to be financed by the State)

In 2003, a first balance sheet of the UTP implementation is now on work. Two tramway lines are now operating and give good results in terms of patronage. The other right-of-way PT lines are planned for the next 5 years. But it seems the fight to reduce private car market share is still not won, and difficulties for parking cars in the city centre are increasing.

5. Conclusion: the need to go further

The transport policies based on the increase of PT supply show their limits. In order to favour a sustainable mobility, it becomes now to be clear that transport policies have also to act more drastically against car use. It means to modify the relatively good traffic conditions (except in the very city centre where PT is faster than car: its market share is more than 40 %). Several possibilities are presently studied, as in many European countries:

- Limiting door-to-door car speed can be done through different ways : reducing road and/or parking capacity, limiting car access by regulations (no car streets in dense area). Such a measure needs to strongly increase PT supply, in order to avoid congestion, air pollution and negative impacts on economic activity in the city.
- An alternative is given by the city of London, where an urban pricing scheme is implemented to reduce car use in the city centre. This solution seems to be more efficient, as it reduces car traffic, without limiting average car speed (for people who accept to pay the toll), and it can have a positive impact on companies productivity. On the contrary, this solution can make merge some questions about social equity, as low income households are more penalised than rich ones. Different types of road pricing can be implemented to reduce this problem, such as a fixed monthly tax, which level can be adapted to the willingness to pay for some social groups.
- Another strategy, which can be more coherent with the objectives of a sustainable development is not to act on the number of trips done by car, but on the total travel distance done by households. Some researches are presently conducted on a system of gasoline rights to limit car use. A free rights market can then operate, in which people who don't use all their rights can sell them to those who need to travel frequently by car.
- In the same way, land use policies can be designed in order to reduce travel distances, favouring short distance trips, whatever the mode of transport is. But such a policy needs a good co-operation between communes, and previous experiences show how difficult it is.

These examples of new strategies give an idea of what future urban transport policies in European cities could be. Up to now, road pricing policies are not possible in France, due to juridical problems (tolling is only allowed for bridge or tunnel, and cannot be applied on the whole street network). Even if transport experts are able to invent sophisticated solutions to improve transport policies, it will be necessary to incite to a public debate on

their objectives, as it is not easy to get the agreement of a population whose style of life is built on the basis of easy and speedy trips in the city. This can be the most difficult challenge for the next years.

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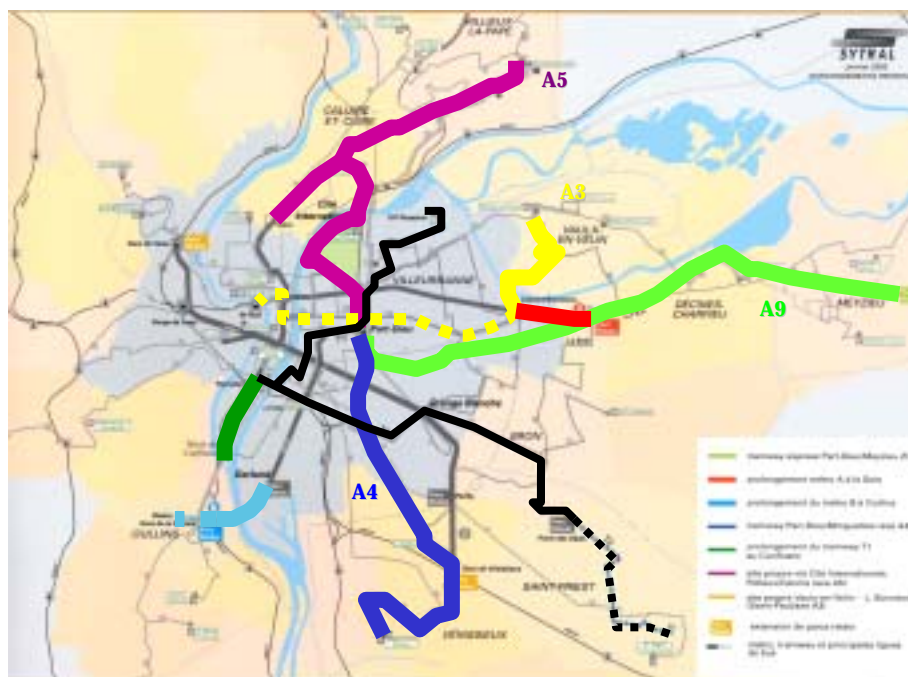
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The 900 M€ Investment Plan for 2002-2007

Figure 2: the urban transport network in the agglomeration of Lyon, and the present 5 year investment plan

Source: SYTRAL, 2002